Control

Table 1

Basalt rock dust is a remineralizer that is used in other parts of the world but there is limited information on its effectiveness to supply crops with nutrients in neutral and alkaline soils. To test the efficacy of basalt as a mineralizer for grain, Shelley and Tony grew Heritage Amber Spring Wheat in replicated plots with and without basalt amendments.

**IN A NUTSHELL**

**METHODS**

To evaluate the effectiveness of basalt rock dust, Shelley and Tony chose Heritage Amber Spring Wheat - a hard spring wheat that is high in protein and prized for bread baking. They grew replicated plots of the heritage wheat with and without basalt additions (Table 1) in a paired design (analyzed via paired t-test).

They added basalt (Huplaso; 1 tonne/acre) and NPK + sulphur fertilizer (475 lb/acre) on May 15, 2019 and planted all plots on May 18, 2019. They harvested on August 16, 2019.

After using basalt rock dust in their vegetable garden, Shelley and Tony observed greater disease resistance, drought tolerance, vitality and taste, deep root structure and longer periods of production. With these observations and knowing that wheat, as a monocot, has relatively high silicon requirements, the Spruits were curious to see what effect basalt rock dust had on their heritage grain.

**RESULTS**

**Yield**

![Graph showing mean yield and standard error of Heritage Amber Spring Wheat planted with and without basalt rock dust.](image)

- **Yield of Heritage Amber Spring Wheat was not statistically or practically different in plots amended with and without basalt rock dust (P=0.21).**
- **There is a 21% chance that the 1.6 mean bushel difference is due to natural variation in yield among plots, and not the basalt.**

**Other Observations**

Throughout the season, Shelley and Tony did not observe differences between the control and basalt treatment plots with regards to seed emergence, size of stalk, plant height, seed quality, lodging, and signs of blight and Fusarium.

Overall, they observed smaller seed heads, lower protein levels and lower yields in 2019 compared to other years. This is likely a result of a cold and wet spring and five week drought mid-season.

At the same time, the Heritage Amber Spring Wheat - a landrace variety - had a strong shaft that withstood lodging in all plots and made excellent straw. Even more, their landrace varieties had no detectable trace Fusarium (without spraying!) unlike many other growers in their area with registered varieties.

**TAKE HOME MESSAGE**

In this study, there was no yield advantage for Heritage Amber Spring Wheat or other observable differences that can be attributed to the addition of basalt rock dust.

The function of basalt as a remineralizer of trace minerals means that the benefits of rock dust may take years to detect, especially for neutral to alkaline soils. Shelley and Tony also suspect that the benefits of rock dust for their heritage grain may show up in nutrient-density of the grain, not necessarily in yield or protein content.

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**REFERENCES**

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